CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/RS/W.No.12/CSR-01/255h/CEMENT/2016-17 Date: 27.01.2017

TEST REPORT ON CEMENT

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Cement
Sample Received on	:	25.01.2017
Period of Testing	:	25.01.2017 to 27.01.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	27.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	155 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	485 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶಿಕ್ಷಣಸ್ಥಳುವಿಭಾಗ, ದಾಸರಹಳ್ಳಿವಲಯ
ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಸ್. ಗಸ್ತೆ, ರವೀಂದ್ರನಗರ-ಬೆಂಗಳೂರು

****

VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/RS/W.No.12/CSR-01/255h/SAND-Gradation/2016-17 27.01.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Fine Aggregates
Technical Reference	:	IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	:	25.01.2017
Date of Testing	:	27.01.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	93.70	90-100	90-100	90-100	95-100
2.36	75.20	60-95	75-100	85-100	95-100
1.18	53.70	30-70	55-90	75-100	90-100
600 Micron	26.30	15-34	35-59	60-79	80-100
300 Micron	10.50	5-20	8-30	12-40	15-50
150 Micron	4.70	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬ್ಬಿಬಿಎಂಪಿ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ. ಕೃಷ್ಣ ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

****

VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.js@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/RS/W.No.12/WBM/Gradation-II/2016-17 13.02.2017

THE TEST REPORT ON GRADATION OF WATER BOUND MACADAM

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Water Bound Macadam (Grading-II)
Technical Reference	:	MORTH table 400-7
Date of Testing	:	13.02.2017

Oven Dry Wt (gm): **5000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specific limits as per MORTH table 400-7
90	0	0	0	100	100
63	125	125	2.5	97.5	90-100
53	1965	2090	41.80	58.20	25-75
45	2310	4400	88.00	12.00	0-15
22.4	485	4885	97.70	2.30	0-5

*Information is furnished by the Customer/Representative.

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

****

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ. ರಸ್ತೆ, ಮಲ್ಲೇಶ್ವರಂನಗರ, ಬೆಂಗಳೂರು

Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/RS/W.No.12/WBM-II/AIV/2016-17 13.02.2017

TEST REPORT ON IMPACT VALUE OF AGGREGATE

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Water Bound Macadam (Grading-II)
Technical Reference	:	IS : 2386 (Part-4)-1963 (RA-2011)
Date of Testing	:	13.02.2017

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	388	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	90	92	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	298	293	
4	Aggregate Impact value = percent fines 100* (W2/W1)%	23.20	23.90	23.55

*Information is furnished by the Customer/Representative.

Comments:

→ Maximum allowable Aggregate Impact value for Water Bound Macadam is 30%

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಕೆಬ್ಬನಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬ್ಯಾಟರಾಯನಪುರ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

****

Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/RS/W.No.12/WBM-II/Shape.T/2016-17 13.02.2017

TEST REPORT ON FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Water Bound Macadam (Grading-II)
Technical Reference	:	IS 2386(Part 1) 1963 (RA 2011)
Date of Testing	:	13.02.2017

Sl.No.	Description	Result
1	Flakiness Index	11.56%
2	Elongation Index	13.84%
3	Combined Flakiness & Elongation Index	25.40%

*Information is furnished by the Customer/Representative.

Comments:

→ Maximum allowable Flakiness & Elongation Index for Water Bound Macadam is 30%

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

****

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ
ಎಸ್.ಜಿ.ಎಸ್. ಬ್ಲಾಕ್, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/RS/W.No.12/WBM/Gradation-III/2016-17 15.02.2017

THE TEST REPORT ON GRADATION OF WATER BOUND MACADAM

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Water Bound Macadam (Grading-III)
Technical Reference	:	MORTH table 400-7
Date of Testing	:	15.02.2017

Oven Dry Wt (gm): **5000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specific limits as per MORTH table 400-7
63	0	0	0	100	100
53	165	165	3.3	96.7	95-100
45	1550	1715	34.30	65.70	65-90
22.4	2825	4540	90.80	9.20	0-10
11.2	310	4850	97.00	3.00	0-5

*Information is furnished by the Customer/Representative.

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

******

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಬಿ.ಎಂ. ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/RS/W.No.12/WBM-III/AIV/2016-17 15.02.2017

TEST REPORT ON IMPACT VALUE OF AGGREGATE

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Water Bound Macadam (Grading-III)
Technical Reference	:	IS : 2386 (Part-4)-1963 (RA-2011)
Date of Testing	:	15.02.2017

CIVIL ENGINEERING TESTING LABORATORY www.civiltechconsultants.com

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	391	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	88	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	303	303	
4	Aggregate Impact value = percent fines 100* (W2/W1)%	22.11	22.51	22.31

Civil-Tech Consultants & Engineers Bangalore

*Information is furnished by the Customer/Representative.

Comments:

→ Maximum allowable Aggregate Impact value for Water Bound Macadam is 30%

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪ ವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂ... ನುಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ಕೃಷ್ಣ ...ವಿನಾಯಕನಗರ, ಬೆಂಗಳೂರು

****

Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/RS/W.No.12/WBM-III/Shape.T/2016-17 15.02.2017

TEST REPORT ON FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. R. Shivaram,** #4/13, Avalamma Choultry Layout, Magadi Road, Bangalore – 23.
*** Name of Work**	:	Improvements to roads and drains at Vinayaka Layout, Medarahalli near RR college in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
*** Reference**	:	AEE/SSD/PR/QC/52/2016-17 Dated: 25.01.2017
*** Sample ID**	:	Water Bound Macadam (Grading-III)
Technical Reference	:	IS 2386(Part 1) 1963 (RA 2011)
Date of Testing	:	15.02.2017

Sl.No.	Description	Result
1	Flakiness Index	16.29%
2	Elongation Index	10.51%
3	Combined Flakiness & Elongation Index	26.80%

*Information is furnished by the Customer/Representative.

Comments:

→ Maximum allowable Flakiness & Elongation Index for Water Bound Macadam is 30%

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾ
ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

****

Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.